REMARKS

Applicants would like to thank the Examiner for careful consideration in the pending application.

Claims 1-3, 5-9, 13, and 15 are pending in the current claimed invention. Claims 1-3, 5-9, and 13 have been amended. Claims 4, 10-12 and 14 have been cancelled, and Claim 15 has been added. Support for all amendments can be found in the specification as originally filed. No new matter has been added.

REJECTIONS UNDER 35 USC 112

Claim 12 stands rejected under 35 USC 112, second paragraph as being indefinite for failing to particularly point out and distinctly claim the subject matter which the applicant regards as the invention. Claim 12 has been cancelled, thereby rendering this rejection to be moot.

REJECTIONS UNDER 35 USC 102

Claims 1-3, 5 and 8-13 stand rejected under 35 USC 102(b) as being fully anticipated by U.S. Patent No. 5,855,979 to Umehara et al. (hereinafter referred to as "Umehara").

It is well settled that in order for a prior art reference to anticipate a claim, the reference must disclose each and every element of the claim with sufficient clarity to prove its existence in prior art. The disclosure requirement under 35 USC 102 presupposes knowledge of one skilled in art of claimed invention, but such presumed knowledge does not grant license to read into prior art reference teachings that are not there. See *Motorola Inc. v. Interdigital Technology Corp.* 43 USPQ2d 1481 (1997 CAFC).

Umehara discloses an optical recording medium comprising a recording layer which comprises at least one organic dye which can inter alia be a phthalocyanine dye, a light interference layer which also comprises at least one organic dye together with a

light absorbent and/or a thermal decomposition promoter, a reflective layer and a protective layer that are laminated on a substrate. Further, the medium is capable of recording and/or reproducing information by using laser beams of two different wavelengths, λ1 and λ2, wherein λ2 is shorter than λ1 by at least 80 nm. λ1 is of wavelength between 770 and 830 nm and λ2 is of shorter wavelength, for example, between 620 and 690 nm (column 3, lines 32 and 33), or 480 and 540 nm or 400 and 440 nm (column 3, lines 40-42).

The Applicants submit that Umehara does not teach or suggest a method of recording information on an optical data medium as recited in amended independent Claim 1. In particular, Umehara fails to teach or suggest an information layer that contains a light-absorbing including at least one phthalocyanine and being recorded on using blue light having a wavelength in the range of about 360 nm to about 460 nm as recited in amended independent Claim 1. Umehara discloses the use of phthalocyanine dyes and wavelengths in the range of about 360 nm to about 460 nm separately, but fails to teach or suggest using phthalocyanines dyes in combination with recording and reading an optical data medium using blue light having a wavelength of about 360 nm to about 460 nm. Specifically Umehara discloses the use of recording layer dyes with absorption maximums at around 700 nm (column 7, line 33) of which phthalocyanines are a preferred example (column 7, lines 47-49). However in discussions of dyes for use at shorter wavelengths (620 to 690 nm (column 17 line 57) and 480 to 540 nm (column 18, line 57)), phthalocyanines are clearly absent. Umehara merely teaches the use of phthalocyanines at higher wavelengths. Accordingly, Umehara fails to teach or suggest the use of phthalocyanines at shorter wavelengths and does not teach or suggest every element of amended independent Claim 1.

Furthermore, the Examiner states that a recording layer comprised of phthalocyanine would inherently be able to be recorded on using at least one wavelength in the range of 360-460, and cites U.S. Patent No. 5,486,437 to Iwamura et

al. (hereinafter referred to as "Iwamura") and Whalley, (J. Chem. Soc, pt 1 (1961) PP. 866-869) as providing examples of phthalocyanine dyes that absorb in the Soret band.

It is well settled U.S. law that if an invention is anticipated under inherency, the invention must flow as a necessary conclusion from the prior art, not just a possible one. The fact that the prior art *may* possibly have the same features as the claimed invention will not substantiate a finding of inherency (*In re Oerlich*, 212 USPQ 323, 326 (CCCPA 1981)). Further, in relying upon the theory of inherency, the Examiner must provide, a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows form the teachings of the applied art. (*Ex parte Levy*, 17 USPQ2d 1461, 1465 (Bd. Pat. Appl. & Inter 1990)).

Iwamura does not disclose the absorption of phthalocyanines in the Soret band, and therefore, the use of phthalocyanines would not flow as a necessary conclusion from the disclosure of Iwamura. Rather, Iwamura teaches that "porphyrin compound having the formula (5) exhibits strong and acute absorption (Soret band) in a wavelength region of 400 to 500 nm" (See Iwamura column 4 lines 26-28). Formula (5) is defined in column 3, lines 46-57 of Iwamura and does not include phthalocyanines. Therefore, Iwamura does not teach or suggest that phthalocyanine dyes absorb at Soret band wavelengths and cannot provide a basis in fact and/or technical reasoning to reasonably support the characteristics of phthalocyanines as being able to absorb at wavelengths in the range of about 360 nm to about 460 nm as recited in the present claimed invention.

Similarly, the use of phthalocyanines at short wavelengths would not flow as a necessary conclusion from the disclosure of Whalley. On the contrary, Whalley teaches that the "phthalocyanine complexes of bivalent Cu, Ni, Co, Fe, Zn, Pd, and Mg were very similar to one another, having a single, narrow, intense band in the 650-675 mμ region" (See Whalley, page 867, second full paragraph, lines 7-9). The data provided by Whalley clearly show that phthalocyanines absorb strongly (ǻ > 150,000) at

longer wavelengths (about 675 nm), and weakly (ε about 50,000) at shorter wavelengths (350 nm) (see Whalley Table 3). Therefore, Whalley teaches an intense absorption peak for phthalocyanines at longer wavelengths (650-675 nm). One skilled in the art would choose a light absorbing compound for use in the information layer of an optical data carrier based on the strongest absorption peak of the compound, and would, therefore, inherently use phthalocyanines at longer wavelengths not with blue light at wavelengths in the range of about 360 nm to about 460 nm recited in amended independent Claim 1.

Accordingly, neither Iwamura nor Whalley provide support that phthalocyanines could inherently be used in an optical recording medium at wavelengths in the range of about 360 nm to about 460 nm. Reconsideration of the Examiner's rejection is respectfully requested.

Claims 2, 3, 5-9, 13, 15, and 16 depend either directly or indirectly from and add further limitations to amended independent Claim 1 and are deemed to be allowable for at least the same reasons in connection with amended independent Claim 1. Reconsideration of Claims 2, 3, 5-9, 13, 15, and 16 is respectfully requested.

Claims 1-3, 5, and 8-13 stand rejected under 35 USC 102(b) as being fully anticipated by U.S. Patent No. 5,820,962 to Kimura et al. (hereinafter referred to as "Kimura").

Kimura teaches the use of phthalocyanine as optical recording medium for write-once compact disk (CD-R). The disks created in Examples 2 and 3 of Kimura are written on by means of a semiconductor laser. One of ordinary skill in the art would know that wavelengths used in CD-R recorders can range from 775 to 800 nm and that the optimum recording power is encoded as an estimated power between 4 to 8 mW for a laser at 785 nm wavelength. Kimura, therefore, inherently teaches the use of phthalocyanine dyes at these wavelengths between 775 and 800 nm.

As with Umehara, Kimura fails to teach or suggest the use of phthalocyanines at wavelengths in the range of about 360 nm to about 460 nm as recited in amended

independent Claim 1 and, therefore, fails to teach or suggest each and every limitation of amended independent Claim 1. Reconsideration of this rejection is respectfully requested.

The Examiner states that the phthalocyanines recited in independent Claim 1 would inherently be able to be recorded on using at least one wavelength in the range of 360-460 nm and points to JP 11-138993 to Miyamoto et al. (hereinafter referred to as "Miyamoto"), Iwamura, and Whalley. As discussed above, Iwamura and Whalley cannot be relied upon for determining inherent characteristics of phthalocyanines. Similarly, Miyamoto teaches a DVD-R comprising, a "recording layer containing a first dye material having a sub-absorption peak in 600 to 700 nm and a second dye material having a maximum absorption peak in 400 to 600 nm" (Abstract). The first material is preferably a phthalocyanine dye (sub-absorption peak of 600 to 700 nm), and the second material is preferably a porphyrin dye (maximum absorption peak of 400-600 nm). Therefore, following the teachings of Miyamoto, one of ordinary skill in the art would inherently use phthalocyanine dyes at longer wavelengths (600 to 700 nm), and not "with blue light at wavelengths in the range of about 360 nm to about 460 nm" as recited in amended independent Claim 1.

Accordingly, neither Miyamoto, Iwamura, nor Whalley provide support that phthalocyanines could inherently be used in an optical recording medium at wavelengths in the range of about 360 nm to about 460 nm. Reconsideration of this rejection is respectfully requested.

Claims 2, 3, 5-9, 13, 15, and 16 depend either directly or indirectly from and add further limitations to amended independent Claim 1 and are deemed to be allowable for at least the same reasons in connection with amended independent Claim 1. Reconsideration of Claims 2, 3, 5-9, 13, 15, and 16 is respectfully requested.

Claims 1-3, 5, 6 and 8-13 stand rejected under 35 USC 102(b) as being fully anticipated by JP 59-177743 to Takasu et al. (hereinafter referred to as "Takasu").

Takasu teaches an optical recording media consisting of basically 4 layers. The Examiner states that the compound used in the Example of the reference is the same as the compound used in Example 1 of the present application. However, it is clear that Takasu does not teach or suggest the present claimed invention because Takasu teaches the use of an 820 nm laser in combination with the above mentioned compound. Therefore, Takasu fails to teach the combination of at least one phthalocyanine and "blue light at wavelengths in the range of about 360 nm to about 460 nm", as recited in amended independent Claim 1, and does not teach or suggest each and every limitation of amended independent Claim 1.

Furthermore, Takasu was issued in 1983 prior to the development of a blue light laser, and before one of ordinary skill in the art would have thought about using blue light to write on an optical recording media. Therefore, at the time of the Takasu invention one of ordinary skill in the art would have been unable to practice the invention using "blue light at wavelengths in the range of about 360 nm to about 460 nm", as recited in presently amended independent Claim 1, and Takasu cannot be relied upon as the basis of a 35 USC 102(b) rejection. Accordingly, reconsideration of amended independent Claim 1 is respectfully requested.

Claims 2, 3, 5-9, 13, 15, and 16 depend either directly or indirectly from and add further limitations to amended independent Claim 1 and are deemed to be allowable for at least the same reasons in connection with independent Claim 1. Reconsideration of Claims 2, 3, 5-9, 13, 15, and 16 is respectfully requested.

Claims 1-3, 5, 6 and 8-13 stand rejected under 35 USC 102(b) as being fully anticipated by JP 01-030038 to Kondo et al. (hereinafter referred to as "Kondo").

As with Takasu, Kondo teaches a compound used in the Example that is the same as the compound used in Example 1 of the present application. Kondo was issued in 1978 prior to the development of a blue laser and would have relied on a laser used at a wavelength of 700-850 nm as this was the technology of the time. Therefore, Kondo fails to teach or suggest the combination of at least one phthalocyanine and

"blue light at wavelengths in the range of about 360 nm to about 460 nm", as recited in amended independent Claim 1, and does not teach or suggest each and every limitation of amended independent Claim 1. Reconsideration of this rejection is respectfully requested.

Additionally, Kondo was issued in 1978 prior to the development of a blue laser, and before one of ordinary skill in the art would have thought about using blue light to write on an optical recording media. Therefore, at the time of the Kondo invention one of ordinary skill in the art would have been unable to practice the invention using "blue light at wavelengths in the range of about 360 nm to about 460 nm", as recited in presently amended independent Claim 1, and, therefore, Kondo cannot be relied upon for this rejection. Reconsideration is respectfully requested.

Claims 2, 3, 5-9, 13, 15, and 16 depend either directly or indirectly from and add further limitations to amended independent Claim 1 and are deemed to be allowable for at least the same reasons in connection with amended independent Claim 1. Reconsideration of Claims 2, 3, 5-9, 13, 15, and 16 is respectfully requested.

Claims 1-3, 5, 6 and 8-13 stand rejected under 35 USC 102(b) as being fully anticipated by JP 01-050253 to Aoyangi et al. (hereinafter referred to as "Aoyangi").

As with Takasu and Kondo, Aoyangi teaches a compound used in the Example that is the same as the compound used in Example 1 of the present application. Aoyangi was issued prior to the development of a blue laser and would have relied on a laser used at a wavelength of 700-850 nm. Therefore, Aoyangi fails to teach the combination of at least one phthalocyanine and "blue light at wavelengths in the range of about 360 nm to about 460 nm", as recited in amended independent Claim 1, and does not disclose each and every limitation of amended independent Claim 1. Accordingly, Aoyangi cannot anticipate independent Claim 1. Reconsideration is respectfully requested.

Claims 2, 3, 5-9, 13, 15, and 16 depend either directly or indirectly from and add further limitations to independent Claim 1 and are deemed to be allowable for at least

the same reasons in connection with independent Claim 1. Reconsideration of Claims 2, 3, 5-9, 13, 15, and 16 is respectfully requested.

Claims 1-3, 5 and 7-13 stand rejected under 35 USC 102(b) for anticipation by Miyamoto.

As described above, Miyamoto teaches a DVD-R comprising, a "recording layer containing a first dye material having a sub-absorption peak in 600 to 700 nm and a second dye material having a maximum absorption peak in 400 to 600 nm". The first material is preferably a phthalocyanine dye (sub-absorption peak of 600 to 700 nm), and the second material is preferably a porphyrin dye (maximum absorption peak of 400-600 nm).

Miyamoto fails to teach or suggest the combination of phthalocyanines and "blue light at wavelengths in the range of about 360 nm to about 460 nm" as recited in amended independent Claim 1, and therefore, does not teach or suggest each and every limitation of the amended Claim 1.

Furthermore, Miyamoto teaches away from phthalocyanines being written on at shorter wavelengths. The basis of Miyamoto is the ability to write on the same medium at two different wavelength lights using a single dye for each wavelength. According to Miyamoto, information can be stored separately on the individual dye layers allowing the Miyamoto DVD-R to carry at least 2 times the information carried on a single dye containing DVD-R. Additionally, Miyamoto teaches that there necessarily can be no crossover between two dye layers as the formation of errant holes in one or both of the dye layers would damage the data stored in that layer. Therefore, Miyamoto depends on phthalocyanines absorbing only at longer wavelengths and porphyrins absorbing only at shorter wavelengths and teaches away from phthalocyanines absorbing at shorter wavelengths in the range of 360 nm and 460 nm as recited in amended independent Claim 1. Accordingly, reconsideration of this rejection is respectfully requested.

Claims 2, 3, 5-9, 13, 15, and 16 depend either directly or indirectly from and add further limitations to amended independent Claim 1 and are deemed to be allowable for at least the same reasons in connection with amended independent Claim 1. Reconsideration of Claims 2, 3, 5-9, 13, 15, and 16 is respectfully requested.

REJECTIONS UNDER 35 USC 103

Claims 1-3, 5 and 7-13 stand rejected under 35 USC 103(a) as unpatentable over Miyamoto.

It is well-settled that to establish a *prima facie* case of obviousness, the USPTO must satisfy all of the following requirements. First, the prior art relied upon, coupled with the knowledge generally available in the art at the time of the invention, must contain some suggestion or incentive that would have motivated the skilled artisan to modify a reference or to combine references. *ProMold v. Great Lakes Plastics*, 37 USPQ2d 1626, 1630 (Fed. Cir. 1996); *In re Fine*, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988). Second, the proposed modification must have had a reasonable expectation of success, as determined from the vantage point of one of ordinary skill in the art at the time the invention was made. *Amgen v. Chugai Pharmaceutical Co.* 18 USPQ 2d 1016, 1023 (Fed Cir, 1991), *cert. denied* 502 U.S. 856 (1991). Third, the prior art reference or combination of references must teach or suggest all of the limitations of the claims. *In re Wilson*, 165 USPQ 494, 496, (CCPA 1970).

As described above, Miyamoto teaches the use of phthalocyanines at 600 to 700 nm, and the use of porphyrins at shorter wavelengths (400 to 600 nm). Because of the disclosure of a second dye for use at shorter wavelengths, one of ordinary skill in the art have not been motivated to use phthalocyanines alone at wavelengths below 600 nm, in particular between 360 and 460 nm, and would have no expectation of successfully writing on an optical recording medium with blue light.

Furthermore, Miyamoto is clearly directed to a DVD which is recorded with light in the range of 600 and 680 nm. One of ordinary skill in the art would have no expectation of success using blue light (360 to 460 nm) to write on a DVD. Additionally, the disclosure of a second dye for recording at shorter wavelengths clearly teaches away from the use of phthalocyanines as the absorbing dye for shorter wavelength light. Accordingly, Miyamoto fails to teach or suggest the method of or render obvious amended independent Claim 1. In view of the above comments, Applicants respectfully request reconsideration of the Examiner's rejection of amended independent Claim 1.

Claims 2, 3, 5-9, 13, 15, and 16 depend either directly or indirectly from and add further limitations to amended independent Claim 1 and are deemed to be allowable for at least the same reasons in connection with amended independent Claim 1. Reconsideration of Claims 2, 3, 5-9, 13, 15, and 16 is respectfully requested.

Claims 1-3, 5, and 7-13 stand rejected under 35 USC 103(a) as being unpatentable over either Miyamoto, JP 04-185485 to Tatsuzono et al. (hereinafter referred to as "Tatsuzono"), GB 2660489 to Bloom et al. (hereinafter referred to as "Bloom"), Aoyangi, Kondo, or Takasu, further in view of JP 64-011892 (hereinafter referred to as "JP '892").

Applicants submit that Miyamoto, Aoyangi, Kondo and, Takasu fail to teach or suggest the method recited in amended independent Claim for the reasons discussed hereinabove.

Additionally, Tatsuzono merely teaches using porphyrins for recording CD-R's at wavelengths of 780 nm, and does not teach "a method of recording information on an optical data medium... with blue light having a wavelength in the range of about 360 nm to about 460 nm," as recited in amended independent Claim 1.

Bloom teaches an ablative optical recording device in which a light absorptive layer that may include a phthalocyanine is ablated or vaporized by an intensity modulated focused light beam to give holes in the absorptive layer exposing the portions of the reflective layer. The light absorbing layer absorbs at 750-850 nm (pg 1,

line 28). Bloom goes onto explain that the specific phthalocyanines disclosed have refractive indices of 2.4-3.2 and absorption coefficients (K) of 0.3–0.1 at 800 nm. These phthalocyanines were chosen for their abilities to "absorb at solid state laser wavelengths" (page 1, line 40). The output of solid state lasers as known to one skilled in the art is between 2200 and 532 nm which are well longer then the 360 nm to 460 nm recited in amended independent Claim 1.

JP '892 teaches the use of alkoxy or aryloxy substituents directly in the central metal of phthalocyanines, but fails to teach or suggest a method of using these phthalocyanines in an optical recording medium with blue light.

Accordingly, JP '892 does not cure the deficiencies of Miyamoto, Tatsuzono, Bloom, Aoygani, Kondo, or Takasu, as none of these references either alone or in combination with JP '892 teach a method of using phthalocyanines with blue light at wavelengths between 360 and 460 nm as recited in amended independent Claim 1. These combinations of references, therefore, fail to teach or suggest all of the limitations of amended independent Claim 1, and it would not be obvious to one skilled in the art to utilize phthalocyanines at short wavelengths between 360 and 460 nm.

The Examiner again suggests that the absorptive qualities of phthalocyanines are inherent based on the disclosures of above references. However, none of the above disclosures Indicate that phthalocyanines absorb blue light adequately enough to be used in an optical recording medium that is written on with blue light. Furthermore, none of the above references provide a basis in fact and/or technical reasoning to reasonably support that the use of phthalocyanines with blue light necessarily flows from their disclosures. Clearly, there is no basis for the absorption of blue light by phthalocyanines being an inherent quality based on the above references. Accordingly, Applicants respectfully request reconsideration of the Examiner's rejection.

Claims 2, 3, 5-9, 13, 15, and 16 are depended directly or indirectly from and add further limitations to amended independent Claim 1 and are deemed to be allowable for

at least the same reasons in connection with amended independent Claim 1. Reconsideration of claims 2, 3, 5-9, 13, 15, and 16 is respectfully requested.

Claims 1-3, and 5-13 stand rejected under 35 USC 103(a) as being unpatentable over either Miyamoto, Tatsuzono, Bloom, Aoyangi, Kondo, Umehara, Kimura, or Takasu further in view of Iwamura and Whalley.

For all of the foregoing reasons discussed hereinabove in connection with these references, Applicants submit that these references fail to teach or suggest the present claimed invention and respectfully request reconsideration of the Examiner's rejection.

The Examiner suggests that the disclosure of Iwamura that the use of shorter wavelength bands of porphyrin type compounds are known to be useful in shorter wavelength optical recording media because they result in higher density recording and implies that one skilled in the art would modify the disclosures of Miyamoto, Tatsuzono, Bloom, Aoyangi, Kondo, Umehara, Kimura or Takasu in view of the disclosure of Whalley to use phthalocyanines at shorter wavelengths to provide higher density recordings.

The Examiner states that Whalley teaches the presence of strong absorptions in the 350 nm region. On the contrary, Whalley teaches:

> "The spectrum of metal-free phthalocyanine and those of its metal derivatives, here examined, all showed the single band at *ca.* 350 mμ which is characteristic of tetrazaporphins. The cisible spectra of the phthalocyanine complexes of bivalent Cu, Ni, Co, Fe, Zn, Pd, and Mg were very similar to one another having a <u>single, narrow, intense</u> band in the 650-675 mμ region." (page 267, 2nd full paragraph, lines 6-10)

A closer look at the actual data provided by Whalley (pg 868), clearly, shows consistently better absorption at longer wavelengths. In particular, comparisons of absorption at 350 and 665 nm indicate strong absorption (á > 150000) at longer wavelengths (about 650 nm) and relatively weak absorption (á about 50000) at shorter

wavelengths (350 nm). The á value at 350 nm is far below those used by one skilled in the art for dyes used as data carriers.

Therefore, there would be little expectation of success since shorter wavelength light does not provide the single, intense peak observed at longer wavelengths, and Whalley makes no suggestion that the optical characteristic of phthalocyanines would be altered by light at shorter wavelengths in such a way as to make them acceptable data carriers. Therefore, the disclosure of Whalley fails to cure the deficiencies of either: Miyamoto, Tatsuzono, Bloom, Aoyangi, Kondo, Umehara, Kimura or Takasu in view of Iwamura.

Furthermore, no combination of the above references teaches or suggests all of the limitations of the amended independent Claim 1. It is well established that the prior art reference or combination of references must teach or suggest all of the limitations of the claims. *In re Wilson*, 165 USPQ 494, 496, (CCPA 1970). No combination of the references provided above teach a method of recording on an optical data medium using phthalocyanines and blue light at wavelengths between about 360 nm and 460 nm.

Accordingly, any combination of the above references fail to teach or suggest all of the limitations of amended independent Claim 1, and it would not be obvious to one skilled in the art to utilize phthalocyanines at short wavelengths between 360 and 460 nm. Reconsideration of amended independent Claim 1 is respectfully requested.

Claims 2, 3, 5-9, 13, 15, and 16 depend either directly or indirectly dependent from and add further limitations to independent Claim 1 and are deemed to be allowable for at least the same reasons in connection with independent Claim 1. Reconsideration of claims 2, 3, 5-9, 13, 15, and 16 is respectfully requested.

In view of the foregoing amendments and remarks, Applicants believe the pending application is in condition for allowance. Reconsideration and allowance are respectfully requested.

Respectfully submitted,

By _____
Jill Denesvich
Attorney For Applicants
Reg. No. 52,810

LANXESS Corporation
Law & Intellectual Property Department
111 RIDC Park West Drive
Pittsburgh, Pennsylvania 15275-1112
(412) 809-2232
FACSIMILE PHONE NUMBER:
(412) 809-1054

\sr

S:\Law Shared\SHARED\JD\PATENTS\6696\6696 Amendment - 12-20-05.doc